

REMARKS

Claims 1-21 are all the claims pending in the application.

Claims 1-21 are pending in the present application. For at least the reasons herein, Applicant respectfully requests withdrawal of the rejection, and allowance of the claims.

Claims 1-21 stand rejected due to alleged obviousness under 35 U.S.C. § 103(a) over the Examiner's proposed combination of Hashimoto et al. (U.S. Patent No. 3,799,380, hereafter "Hashimoto") in view of Szycher (Handbook of Polyurethanes, 1999). Applicant respectfully submits that the Examiner's proposed combination of references fails to disclose or suggest all of the claimed combinations of features, as required for a prima facie obviousness rejection. For at least the reasons herein, Applicant respectfully requests withdrawal of the rejections.

An exemplary, non-limiting embodiment of the presently claimed invention is directed to a sealing gasket and a method of making the same. The sealing gasket is made of a polyisocyanate component that has an isocyanate group content of 5-38% by weight, and a polyol component having a hydroxyl value of 20-350 mg KOH/g. The polyisocyanate component is obtained by modifying an aliphatic isocyanate and/or an alicyclic isocyanate, which results in a low hardness and also prevents yellowing.

Hashimoto discloses an improved sealing gasket, including a component having a polymethylene polyphenylisocyanate with an isocyanate equivalent of not more than 300, and a polyol component. Applicant respectfully submits that Hashimoto does not disclose a polyisocyanate component having an isocyanate group content of 5-38% by weight, or that the polyol component has a hydroxyl value of 20-350 mg KOH/g. As acknowledged by the

Examiner, Hashimoto fails to disclose that the polyisocyanate component is obtained by modifying an aliphatic isocyanate and/or an alicyclic isocyanate. Instead, the Examiner notes that Hashimoto uses an aromatic isocyanate.

Applicant respectfully submits that it is well known in the art that aromatic and aliphatic isocyanates have different properties. For example, but not by way of limitation, aliphatic polyisocyanates have excellent UV resistance and color stability, whereas aromatic isocyanates experience yellowing over time, but have a lower cost. Thus, Applicant respectfully submits that the aromatic isocyanate of Hashimoto still has the related art yellowing problem.

Hashimoto is neither discusses the yellowing problem or the solution thereof. It states in Hashimoto (*see* Example 1 in column 8, lines 60-62, that “no leakage of the content, deformation, color change or damage of the gaskets could be detected.” (The same statement appears in the other Examples.) This statement seems to indicate that the sealing gasket of Hashimoto did not cause any yellowing problem. Furthermore, Szycher is also silent with regard to the problem of yellowing.

On the other hand, the present specification states that “[t]he present invention aims at providing a sealing gasket for closure (e.g., metal closure of food container), made of a polyurethane elastomer of low hardness and no yellowing and usable even in hygienic storage of food; and a process for producing a closure using such a sealing gasket.” *See* page 5, lines 1-6. Thus, it is quite clear that the present invention aims to solve the yellowing problem, and, for this purpose, the specific polyisocyanate component obtained by modifying an aliphatic isocyanate and/or an alicyclic isocyanate is used as the (A) component. Therefore, one of ordinary skill in

the art would be unable to predict that the problem of yellowing could be solved by combining the two cited references.

Szycher appears to be a portion of a textbook that discloses that cycloaliphatic isocyanates are more hydrolytically stable than MDI. It appears that this component can still be considered a polyisocyanate. The reaction occurs more slowly in cycloaliphatic isocyanates, and must be catalyzed to achieve reasonable reaction rates. However, Szycher does not disclose substituting an aliphatic isocyanate in place of an aromatic isocyanate.

Applicant respectfully submits that the proposed combination of references fails to disclose or suggest all of the claimed combinations of features. For example, but not by way of limitation, Applicant respectfully submits that the combination fails to teach or suggest a polyisocyanate component obtained by modifying an aliphatic isocyanate and/or an alicyclic isocyanate, as recited in independent claims 1, 8 and 15. As acknowledged by the Examiner, Hashimoto fails to teach or suggest this claimed feature alone, and instead, uses an aromatic isocyanate (i.e., MDI).

To cure this acknowledged deficiency of Hashimoto, the Examiner proposes to combine Szycher with Hashimoto, in order to substitute the aliphatic isocyanate in place of the aromatic isocyanate. However, Applicant respectfully submits that Szycher does not disclose or suggest such a motivation.

Also, Applicant respectfully submits that one skilled in the art would not have been motivated to combine these references to produce the claimed combination of features. For example, but not by way of limitation, Applicant respectfully submits that one skilled in the art

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would not have been motivated to make the aforementioned required substitution, because it is not suggested by either of the references.

Even if, *arguendo*, the proper motivation existed, Applicant respectfully submits the combination would not produce the claimed combination of features. Applicant respectfully submits that the proposed combination would not work properly, because the change from an aromatic compound to an aliphatic compound would affect the functionality of Hashimoto to the degree that it did not operate properly. Applicant respectfully submits that due to the difference in properties between aromatic and aliphatic isocyanates, the temperature ranges and hardnesses (e.g., tackiness) disclosed in Hashimoto would not be preserved. Further, additional modification (e.g., higher formation temperature) would be required, and this is not disclosed or suggested in either reference.

Applicant also respectfully submits that the proposed combination fails to disclose or suggest the claimed weight percentage for the polyisocyanate component of 5% to 38%, as recited in independent claims 1, 8 and 15.

Dependent claims 2-7 depend from independent claim 1, claims 9-14 depend from independent claim 8, and claims 16-21 depend from independent claim 15. Applicant respectfully submits that the dependent claims are allowable for at least the same reasons as the independent claims from which they depend. Accordingly, Applicant respectfully requests withdrawal of the rejection, and allowance of the claims.

In claims 22, 23, 26, 27, 30, 31, 36 and 38, the aliphatic isocyanate and/or alicyclic isocyanate is restricted to hexamethylene diisocyanate and/or isophorone diisocyanate. In claims 24, 25, 28, 29, 32, 33, 40 and 42, the high-molecular polyol is restricted to at least one member

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selected from polytetramethylene ether glycols and adipate-type polyester polyols. These claims are not taught or even suggested by the prior art and are, therefore, nonobvious.

Further, claims 34 to 44 are directed to a sealing gasket for closure comprising a polyurethane elastomer obtained by reacting components (A) and (B) under the specific reaction conditions (150-240° for 20-200 seconds) as recited in Claim 15. Applicants assert that these reaction conditions are not taught or suggested in the cited prior art and are, therefore, nonobvious.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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